

Teens: Taking Control of Asthma

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CASE STUDY OBJECTIVES

- To provide adolescents with knowledge and skills to take control of their asthma
- To enhance the knowledge and skills of school staff, health professionals, and parents to assist adolescents with asthma

SCHOOL DEMOGRAPHICS

The Power Breathing Program (PBP) was conducted in 12 culturally and socioeconomically diverse schools in school districts in Anchorage, Alaska (AK), and Kansas City (KC) suburbs. The student population in the participating Anchorage schools is African American (9%), Asian American (5%), Hispanic (5%), and Native Alaskan (10%), representing ethnicities disproportionately affected by asthma. Student populations in the 3 participating KC metropolitan area school districts are African American (37%), Asian American (2%), and Hispanic (9%). Enrollment in grades 6-8 in participating schools ranges from 580 to 900 in Anchorage and 660 to 800 in KC, with an average of 27% of students eligible for free or reduced-price meals. All but one of the participating schools have a full-time nurse. One Anchorage school has a part-time nurse, who works 3 days/week. The nurse to student ratio ranges from 1:580 to 1:900.

PROGRAM CONTEXT

The Asthma and Allergy Foundation of America (AAFA) developed the PBP in 1997 in collaboration with teens, health care professionals, health educators, and community leaders. The program, designed for adolescents aged 11-19, covers asthma basics and management, addresses adolescents' social and lifestyle concerns, and encourages them to take control of their asthma. All educational materials described in this case study are available on the AAFA Web site.

Since 2001, AAFA has implemented a comprehensive community-based teen initiative, Teens: Taking Control of Asthma, in collaboration with its Alaska and Kansas City chapters, using the PBP to conduct asthma education classes for middle school students. Asthma education was also provided to parents, school staff, school nurses, and local community health care professionals. Prior to this initiative, students did not participate in any other school-

based asthma programs although some may have received individual asthma education from their personal health care provider.

CASE STUDY

Program Components

Student Education and Support. Each chapter employed a part-time program coordinator (PC) to manage the program and recruit nurses, respiratory therapists, and health educators with experience in asthma education to facilitate PBP classes. A 1-day training prepared classroom facilitators to conduct either three 90-minute or six 45-minute sessions for middle school students.

Teaching methods included lecture, discussion, group work, demonstration, and problem solving. Content addressed pathophysiology, triggers, social and emotional issues of day-to-day asthma management, medications, and peakflow monitoring. Peer support provided by the group setting facilitated problem solving and reduced the stigma felt by many adolescents with asthma.^{1,2}

AAIRWaves, AAFA's bimonthly teen newsletter, provided ongoing education and support to students. Participating schools received an awareness poster with the message "Teens with asthma have friends who care" and an emergency procedures poster. The AK chapter maintains a Web-based forum where teens and parents can submit questions to physicians and review archived answers. Both chapters provided peakflow meters (PFMs), spacers, and nebulizers to schools to supplement health services for all students with asthma. In addition, all students who participated in the PBP classes received PFMs and spacers.

Asthma Education for School Staff, Health Care Professionals, and Parents. Abbreviated lecture and discussion programs using AAFA's Asthma Management at School were offered at mandatory meetings attended by a majority of school staff. These programs addressed asthma, environmental triggers, and ways to assist students with maintaining optimal control of their asthma. Teachers, including physical education (PE) teachers and coaches, received educational materials provided by AAFA national (Table 1).

Each year, 60-150 school nurses and other health professionals in each city attended sessions of AAFA's Asthma Management and Education program. This 2.5-hour lecture and discussion program, which covers asthma management practices based on National Asthma Education and Prevention Program (NAEPP) guidelines, builds schools' and health care providers' capacity to provide care for students with asthma. Participants earned continuing education credits.

Written Asthma Management Plan. Parents received AAFA and NAEPP materials on ways to assist their child with managing asthma (Table 1) and a permission form to allow their child to participate in PBP classes. All parents of students with asthma also received AAFA's Student Asthma Action Card (SAAC) with encouragement to work with their child's physician to submit a written asthma

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management plan to the school nurse. Mailing copies of the cards to area physicians and promoting the cards at the annual Asthma Management and Education program reinforced the importance of completing a plan. SAACs are on file at participating schools for all students with asthma who visit the health room to use their inhalers.

Factors Facilitating Implementation

Advisory Panels. The KC PC initially collaborated with an existing school-based health advisory panel; the Anchorage PC chose to establish a new community-based advisory group. The local advisory panels provide guidance for the implementation and promotion of the initiative by updating plans annually, offering suggestions for increasing student recruitment and parent involvement, and providing feedback to the PCs by phone and e-mail. The continually expanding membership includes physicians, public health officials, parents, and school representatives (nurses, principals, teachers, counselors, dietitians, and school district officials).

The AK advisory panel helped to promote SAAC use throughout the school district. The KC schools, which were already using the SAAC, reaffirmed their commitment to having a written plan for each student with asthma.

Gaining Access to Schools. The PCs initially contacted middle school nurses and also worked with school district officials and school nurse members of the advisory groups to gain entry into the schools. The total number of participating schools expanded from 2 middle schools at each site in year 1 to a total of 12 schools in year 4.

Working With School Nurses. School nurses have been key partners for the success of this project. They identified students with asthma through the annual school registration process and health and attendance records, typically recommending that students who visited the health office or missed school frequently attend the PBP

classes. To ensure confidentiality, PCs did not receive parent contact information. PBP facilitators only received student names and grade level. Assigned identifier numbers were used on all evaluation forms.

School nurses assisted the PCs with scheduling classes, securing rooms, calling parents to obtain signed permission forms, keeping teachers informed, and ensuring student attendance at PBP classes. When, in a few instances, the school nurse was on sick leave and unavailable to coordinate these tasks, attendance difficulties occurred. One PC commented that a motivated, supportive school nurse was "worth her weight in gold."

Enhancing the Learning Environment. Although the PBP is designed for 10-12 students, facilitators reported that working with smaller groups of 6-8 students enhanced learning. All KC PBP classes used cofacilitators to ensure that participants received necessary assistance. The majority of sessions in KC occurred during class time with students being excused from regular classes. In Anchorage, most sessions were scheduled during lunch with one conducted through an after-school program.

Promoting Community Awareness. An artist commissioned by the AK chapter created a mural promoting asthma awareness that was displayed on the side of a participating school. Its location on a major highway was visible to hundreds of people. A portable version of the mural was shown at other schools, the Alaska State Asthma Summit, and community events.

The KC chapter used billboard advertisements and television for a 3-year asthma awareness campaign. The message of year 1, "I have asthma, but asthma doesn't have me," and subsequent messages encouraged children with asthma to manage their asthma effectively. A local television station promoted the teen program and an annual Family Asthma and Allergy Awareness Education Day featuring interactive educational games for students, parents, and health care professionals.

Table 1
Contents of Educational Packets

Name of Material	Parents	Teachers	PE Teachers/ Coaches
What is asthma?	X	X	X
Early warning signs	X	X	X
When to keep a child with asthma home?	X	X	X
Practical tips	X	X	X
Peakflow meters	X	X	X
Use of inhalers/spacers	X	X	X
Exercise-induced asthma			X
Managing acute episodes	X	X	X
Field trip tips		X	
Classroom triggers		X	

X = content was present.

Obstacles Encountered and Overcome

Scheduling Professional Development Sessions With School Staff. In year 1, principals' reluctance to relinquish valuable meeting time resulted in PCs having only 15 minutes to speak at teachers' meetings. As staff interest grew in subsequent years, the amount of time provided for asthma education increased. By year 3, the KC PC met with teachers at the August in-service meeting to discuss ways they could help students manage their asthma and to coordinate schedules to enable students to attend PBP classes. In Anchorage, an evening program ensured adequate time for educating school staff about asthma management.

AAFA developed and distributed packets of information (Table 1) on asthma in response to coaches' requests for information on ways to assist students with asthma in physical education (PE) classes and on sports teams. The KC PC's allotment of 10 minutes to meet with coaches and PE teachers at the August 2004 school staff meeting to discuss exercise and asthma management expanded to 45 minutes as a result of participants' interest.

A successful collaboration between the AK PC and the local chapter of the American Alliance for Health, Physical Education, Recreation and Dance to educate area

coaches and PE teachers led to a district-wide program on asthma and exercise for coaches and PE teachers in year 4.

Student Attendance at Program Sessions. Illness, school activities such as sports, and, less frequently, in-house suspensions or detention interfered with student attendance. When offering a PBP during an Anchorage after-school program to avoid scheduling conflicts proved unsuccessful, the PC concluded that students and parents did not understand the importance of attendance. Strategies to promote attendance at both sites included sending reminder notes, calling students from their classes, and providing passes. In addition, AAFA national staff created a PBP video for students to view key messages from missed sessions. Students met with the facilitator to assess their learning and ask questions before rejoining the class. Incentive items such as water bottles and CD cases encouraged attendance and completion of assigned activities. As a result, student completion rates increased from 80% in year 2 to 89% in year 3 (Table 2). In year 4, 97% completed the PBP. Moreover, students expressed excitement about the PBP and encouraged others with asthma to enroll. One student indicated he was glad to have a new buddy who understood what living with asthma is like.

Locating Students for Follow-Up Sessions. At 6 months, students received invitations to attend a reunion session to reinforce asthma management and complete follow-up evaluation forms. Barriers included transfers to other schools, graduating to high school, or family relocation. PCs worked with school nurses to track students to their new schools. AAFA mailed evaluation forms to students who were unable to attend, and nurses at the new schools assisted students with returning completed forms.

Involving Parents. Both sites experienced low parent attendance at asthma education programs. Although many parents expressed interest in learning more about asthma, they were unable to attend programs for many reasons. Consequently, both PCs sought to educate parents in different ways. Personal phone contact from the school nurse was the most successful strategy. Mailing packets with information about asthma and the PBP to parents at newly recruited schools in Anchorage generated so much interest that additional classes for students were needed.

AAFA created a video, "A Message to Parents," explaining the importance of managing asthma and enrolling their child in the PBP. The video was shown at parents' nights and health fairs and loaned for home viewing. Segments show teens having fun learning about asthma and demonstrate ways to communicate with parents, friends, school nurses, and physicians.

Institutionalizing the Program for Sustained Program Implementation

Over the past 4 years, both chapters not only sustained the support of their advisory panels and the commitment of the schools but also expanded the number of participants. The KC PC participated in establishing a local asthma coalition and will play a critical role in developing an area-wide education plan. The AK PC participated in the Alaska State Asthma Summit and, as chairperson of the Program for Youth Task Force, is now working to make the PBP mandatory statewide for all students with asthma.

Outcome Measures and Evaluation

Students completing the PBP in the past 4 years submitted completed self-report questionnaires that gauged their knowledge, asthma management, and outcomes on multiple measures at pre- and postprogram and 6-month follow-up (Table 2). The questionnaire completed at the first session and at the 6-month follow-up assessed frequency and management of asthma attacks, medication use, activity limitations, school absences, and school nurse office visits for asthma. The second form administered postprogram and at 6 months, additionally assessed medication compliance and trigger avoidance. The third questionnaire, completed postprogram and at 6-month follow-up, evaluated decision-making skills on managing asthma in social situations.

The majority of the pre- and postprogram data were collected during spring; follow-up data were collected in the fall. Of 108 students completing the PBP between October 2003 and March 2004 (year 3), 53% were boys and 47% were girls with ages ranging from 11 to 15 years. The 3 most common asthma triggers reported were exercise (67%), smoke or fumes (50%), and colds or flu (40%).

Three outcome measures showed substantial improvement of student self-management. Preprogram, 17% of students reported absences or tardiness due to asthma more than 1 time a month compared to 8% at 6 months (Figure 1). All students reported some limitations to their activities, with 12% reporting daily limitations preprogram compared to only 6% at 6 months. Preprogram, 46% of students reported 1 or more asthma episodes requiring a visit to the physician's office, emergency department, or urgent care center for the year prior to enrolling in the program compared to only 34% of students at follow-up.

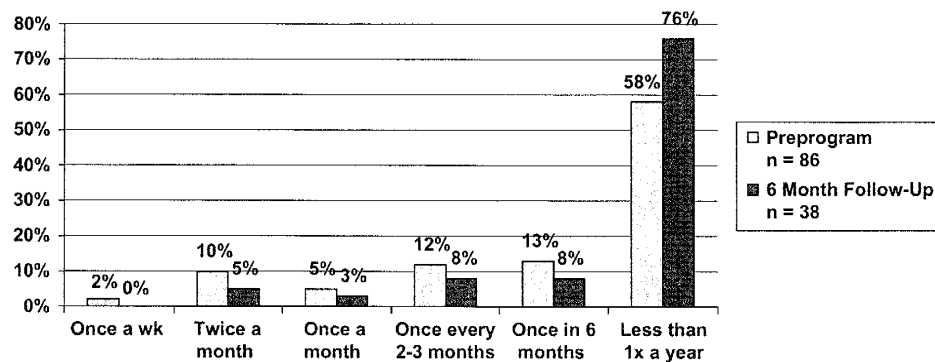
Additional findings included increased use of peakflow meters (PFMs) and controller medications and decreased daily use of rescue inhalers. Preprogram, 14% indicated PFM usage ranging from daily to several times a month compared to 34% at 6 months. Preprogram, 33% indicated frequent rescue inhaler use (ranging from more than once a day to twice a week) compared to 29% using their

Table 2
Students Participating in PBP Classes

Year	Students Enrolled N	Graduates N (%)	Participants at 6-Month Follow-Up N
Year 1 (2001-2002)	34	33 (97)	NA
Year 2 (2002-2003)	75	60 (80)	20
Year 3 (2003-2004)	121	108 (89)	43
Year 4 (2004-2005)	112	109 (97)	39
Total	342	310 (88)	102

NA: not available.

Figure 1
Frequency of Self-Reported School Absences During Year 3 (2003-2004)



rescue inhaler less than 1 time a week. At 6 months, 21% reported frequent use (more than once a day to twice a week) compared with 40% using it less than 1 time a week. Preprogram, only 38% reported using their controller medication daily or during certain seasons compared with 44% reporting similar usage at 6 months.

LESSONS LEARNED

- School nurses are key partners for program success.
- Students are excited to learn that they can manage their asthma and share that learning with their peers.

- Incentives and frequent reminders improve student attendance in PBP classes.
- Parents with limited time to attend classes respond to personal contact.
- Advisory panels are valuable resources. ■

References

1. Berg J, Tichacek MJ, Theodorakis R. Evaluation of an educational program for adolescents with asthma. *J Sch Nurs*. 2004;20(1):29-35.
2. Gibson PG, Shah S, Mamoon HA. Peer-led asthma education for adolescents: impact evaluation. *J Adolesc Health*. 1998;22(1):66-72.